IN THE SPECIFICATION

Please replace the paragraph on page 19, beginning at line 19, with the following amended paragraph:

D1

Referring to Figure 3, ~~in~~ variable definitions are given in block 300. In step 301, variable i is set to 1. Variable i will be used to designate the various VTGs of the network. In step 303, a VTG corresponding to i is selected. In step 305, a variable M_i is set to the actual size, N_i, of the selected VTG. The size is designated in terms of the number of DSO channels in the VTG. In step 307, it is determined whether the fraction of blocked calls for VTG_i exceeds the threshold, i.e., if $b_i > T$. If the current VTG is experiencing less call blocking than the threshold level, then it is possible that some of the bandwidth from that VTG can be reassigned to another VTG that is exceeding the call blocking threshold. Accordingly, if $b_i<T$, flow proceeds to steps 308 through 327 to resize this VTG, if possible.

Please replace the paragraph on page 27, beginning at line 7, with the following amended paragraph:

D2

The flow chart of Figure 3 describes a level-2 implementation of the present invention. It should be understood by those skilled in the art that a level 0 implementation would include only steps 301, 303, 305, 307, 333, 335, 339, 340, 329, 341, 343 and 345. In step 335, flow would proceed back to step ~~341~~ 331. An affirmative response in step 307 would cause flow to proceed back to step 331.

Please replace the paragraph on page 27, beginning at line 20, with the following amended paragraph:

D3

The following implementation considerations should be noted. As noted above, the point-wise stationary approximation (PSA) model for the offered load utilized in equations 1a and 2a shows a strong correlation to the stochastic behavior of the estimated call attempt rate. Thus, a straightforward implementation of the PSA model would result in under-estimation of the required VTG size. Also as noted above, the discreet implementation of the modified offered load (MOL) model utilized in equation 2b (hereinafter termed D-MOL) would be

$$\rho(t)=\frac{\lambda(t)}{\mu}x\mu T+\rho(t-T)x[1-\mu T]$$

Yet, being a discrete approximation of the exact ~~Mol~~ MOL model, such discrete steps can produce unstable estimators over certain operational regimes, particularly with decreasing call rates over time. A simple fix is to use the ~~D-Mol~~ D-MOL model to estimate the call attempt rate when call rate has been historically increasing over time and use the PSA model when call rate has been historically decreasing over recent time. Thus,

D3

$$\rho(t+T)=\frac{\lambda(t)}{\mu} \qquad PSA\,Model$$
$$\rho(t+T)=\frac{\lambda(t)}{\mu}x\mu T+\rho(t+T)x[1-\mu T] \quad DMOL\,Model$$

Please replace the paragraph on page 30, beginning at line 23, with the following amended paragraph:

Referring now to Figure 4, variables are defined in block 400. The ~~the~~ inputs are the fraction of blocked calls per VTG (b), the call arrival rate per VTG (λ), the bandwidth per call, the number of channels per VTG (N), the blocking threshold (T), the average holding time per call ($1/\mu$), the network connectivity and topological information.

D4

Please replace the paragraph on page 34, beginning at line 3, with the following amended paragraph:

Variables are defined in block 500. The inputs are the fraction of blocked calls per VTG (b), the call arrival rate per VTG (λ), the number of channels per VTG (N), the blocking threshold (T), the average holding time per call ($1/\mu$), the current compression rate (CCR), and network connectivity and topological information.

D5

Please replace the paragraph on page 40, beginning at line 19, with the following amended paragraph:

Referring first to the RTP unaware embodiment of Figure 6, ~~the~~ variables are defined in block 600. The input data are port utilizations (PU), routing information and topological information. In step 601, variable i, which is used to represent the different ports of the network is set to 1. In step 603, the i^{th} port is selected. In step 605, the set R_i of PVG pairs contributing traffic to the presently selected port is determined from the available topological and routing information. In step 607, the number of calls, C, that can be accommodated at that port is determined by multiplying the physical capacity of the port by a utilization threshold selected by the network administrator. The utilization threshold, U_i, is a fraction (for instance, 0.8) of the physical capacity of the port that the administrator finds acceptable. In step 609, the number of calls per second, α_c, that can be accommodated at that port based on the calculated value C (and other information) is determined by solving equation 1a for α_c. In step 611, the calls per second that are presently passing through that port, α_A, is determined by summing the calls per second through each of the PVG pairs contributing to the traffic at that port.

D6

Please replace the paragraph on page 45, beginning at line 9, with the following amended paragraph:

Figure 7 is a flowchart comprising portions 7A and 7B and illustrating processing for call blocking in an IP network in which RTP measurements are available. Variables are defined in block 700. The inputs in this embodiment are the fraction of packet loss per call (L_c), the packet loss threshold established by the network administrator (L_t), the delay jitter per call (D_c), the delay jitter per call threshold established by the network administrator (D_t) and the PVG pair corresponding to each call.

D7

Please replace the paragraph on page 49, beginning at line 1, with the following amended paragraph:

Variables are defined in block 800. In step 801, variable i, which represents a port of the network, is set to 1. In step 803, the i^{th} port is selected. In decision step 805, the under-utilized ports are segregated from the over-utilized ports. In a RTP aware embodiment, this decision would be based on delay jitter and packet loss statistics as discussed above in connection with step 705 in Figure 7. In a RTP unaware embodiment, it would be based on indirect indicators of congestion such as port utilizations, buffer statistics and routing and topological information. If the present port is under-utilized, nothing is done with respect to it and i is simply incremented (step 807) and flow returns to step 803 for processing of the next port. If the port, however, is being over utilized, then flow proceeds to step 809, in which the set R of PVG pairs contributing traffic to the port is determined from the available topological and routing information. In step 811, the number of calls, C, that can be accommodated at that port is determined by multiplying the capacity of the port by a utilization threshold selected by the network administrator. The utilization threshold, U, is a fraction, for instance, 0.8, of the total physical capacity of that port that the administrator finds acceptable.

D8

Please replace the paragraph on page 50, beginning at line 4, with the following amended paragraph:

In steps 817, a preliminary bandwidth reduction correction factor, p_B, due to the i^{th} port is determined. This value is the fractional difference between the actual call rate being experienced and the desired maximum call rate for the port. The larger this value, the more congested the port. Then, in steps 819, ~~through~~ 823 and 825, for every PVG pair contributing traffic to port i, the bandwidth correction factor calculated for port i in step 817 is assigned to it, if and only if it is greater than any bandwidth correction factor previously assigned to that PVG pair.

D9

Please replace the paragraph on page 54, beginning at line 16, with the following amended paragraph:

Variables are defined in block 900. In step 901, variable i, which represents a port of the network is set to 1. In step 903, the i^{th} port is selected. In step 905, the set R_i of PVG pairs contributing traffic to the presently selected port (the i^{th} port) is determined from the available topological and routing information. In step 907, the number of calls, C, that can be accommodated at that port is determined by multiplying the capacity of the port by a utilization threshold selected by the network administrator. The utilization threshold, U_i, is a fraction, for instance, 0.8, of the total physical capacity of that port that the administrator finds acceptable. In step 909, the number of calls per second, α_c, that can be accommodated at that port based on the calculated value C is determined by solving equation 1a for α_c. In step 911, the calls per second that are presently passing through that port, α_A, is determined by summing the calls per second through each of the PVG pairs contributing to the traffic at that port.

D10

Please replace the paragraph on page 58, beginning at line 17, with the following amended paragraph:

In either event, flow proceeds to step 951, where a new voice compression ratio is determined using the newly calculated call capacity, M_k, determined in step 945 or 949 that would maintain the call blocking probability below the predetermined threshold, T. Note that, if step 951 was reached through step 945, then the compression ratio will be increased in step 951 to relieve congestion. If, on the other hand, step 951 was reached through step 949, then the compression ratio will be decreased in step 951 since no port to which that PVG pair is contributing traffic is experiencing poor quality of service and thus the compression ratio being used, if any, may be decreased. In step 952, N_k is set to M_k.

D11

Please amend the paragraph on page 59, beginning at line 3, with the following amended paragraph:

D12

From step 95~~1~~2, flow proceeds to steps 953-957 where a new compression ratio is actually assigned to the PVG pair. Specifically, if the compression ratio c determined in step 951 is equal to a standard compression ratio, then that ratio is assigned to that PVG pair (step 955). If not, then the highest of the standard compression ratios that is less than c is assigned to that PVG pair (step 957). Flow then ~~returns~~ proceeds to step 959 for processing of the remaining PVG pairs, if any.